

**EGERTON UNIVERSITY**

**UNIVERSITY EXAMINATIONS**

**NJORO CAMPUS**

**FIRST SEMESTER 2013/2014**

**THIRD YEAR EXAMINATION FOR THE AWARD OF DEGREE OF BACHELOR SCIENCE,**

**BACHELOR OF EDUCATION AND BACHELOR OF ARTS**

**MATH 318: CALCULUS 111**

**STREAM:** ICEN Y3S1 **TIME:** 2 HRS

**DAY:** THURSDAY: 12.00 - 2.00 P.M **DATE:** 5/12/2013

**INSTRUCTIONS:**

1. ***Answer Question ONE and any other TWO Questions.***
2. ***Solutions of new Questions must be started on a Fresh page.***

**QUESTION ONE (30 Marks)**



f) Find the equation of the tangent plane and the equations of the normal to the surface



 b) Find $\frac{∂z}{∂x}$ and $\frac{dz}{dx}$ given that *x3 + y3 + z3*– 6*xyz + 3 =0* (6 marks)



c) Use the differentials to estimate the values of $\sqrt{\sqrt{35 }+\sqrt{99}}$ (5 marks)

